UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/775,994	02/02/2001	Kevin Eugene Dombkowski	LUC-300/Dombkowski 7-4	7453

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EXAMINER
SRIVASTAVA, VIVEK

ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

<table>
<tr><td rowspan="2">Office Action Summary</td><td>Application No.
09/775,994</td><td>Applicant(s)
DOMBKOWSKI ET AL.</td></tr>
<tr><td>Examiner
Wesley Stiles</td><td>Art Unit
2616</td></tr>
</table>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _02 February 2001_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-36_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-36_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _05/14/01_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claims 20, 27, and 35 are objected to under 37 CFR 1.75 as being a substantial

duplicate of claims 19, 26, and 34, respectively. When two claims in an application are

duplicates or else are so close in content that they both cover the same thing, despite a slight

difference in wording, it is proper after allowing one claim to object to the other as being a

substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form

the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in a patent granted on an application for patent by another
> filed in the United States before the invention thereof by the applicant for patent, or on an
> international application by another who has fulfilled the requirements of paragraphs (1),
> (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for
> patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of

1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of

2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an

international application filed before November 29, 2000. Therefore, the prior art date of the

reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA

35 U.S.C. 102(e)).

3.   Claims 1, 9, 13, 21 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by

Gummalla (US 2002/0021711). Regarding claim 1, Gummalla discloses a method of sending

PCM data (page 2, paragraph 40) upstream and downstream via a cable protocol (using a CMTS

as defined in paragraph 18), teaching the data sent without packet headers (pages 3-4,

paragraph 54). In addition, Gummalla discloses "when G.711 PCM voice generates a byte of

data every 125 microseconds" on page 2, paragraph 40. Since it is stated that the data is

generated every 125 microseconds, the signals are constructed at a regular sampling interval.

4.   Regarding claim 9, Gummalla teaches a cable system having a cable modem (depicted

as 104 in Figure 1 and described in page 2, paragraph 38), which meets the limitation of the

media terminal adapter. In the adaptation of the invention in which the data is sent without

packet headers as mentioned above, it is inherent that the associated media terminal adapter

would have decreased functionality. By virtue of transmitting the data without headers,

certain hardware functionality would not be required.

5.   Regarding claim 13, Gummalla discloses all of the limitations as mentioned in regards

to claim 1 above.

6.   Regarding claim 21, Gummalla discloses all of the limitations as mentioned in regards

to claim 1 above.

7.   Regarding claim 28, Gummalla discloses an upstream transport device (cable modem

104 of page 2, paragraph 38) which transports PCM data without packet headers as described

previously for claim 1. The presence of an upstream data channel is evident by the statement

"data flows 'upstream' from the cable modem to the CMTS" in page 1, paragraph 18. Also,

Gummalla teaches, "when G.711 PCM voice generates a byte of data every 125 microseconds"

on page 2, paragraph 40. In order for this to occur, there must be a sampler present that

yields PCM data.

8.   Regarding claim 36, all limitations are met by Gummalla as disclosed for claim 28

above, wherein he implies of a media terminal adapter with reduced subscriber functionality as

discussed previously for claim 9.

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
> described as set forth in section 102 of this title, if the differences between the subject

matter sought to be patented and the prior art are such that the subject matter as a whole
would have been obvious at the time the invention was made to a person having ordinary
skill in the art to which said subject matter pertains. Patentability shall not be negatived
by the manner in which the invention was made.

10.   Claims 2-4, 6, 7, 14-16, 22, 23, and 29-31 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Gummalla in view of DOCSIS Specifications. Regarding claim 2, Gummalla

discloses all limitations discussed for claim 1 above. In addition, Gummalla teaches that the

PCM data samples are taken at a sampling interval, disclosed in paragraph 40. Gummalla does

not, however, disclose mapping the PCM samples to an allocation of mini-slots in the upstream

protocol, nor does he disclose that the upstream and downstream protocols are DOCSIS

protocol.

11.   In analogous art, the DOCSIS standards disclose the use of DOCSIS protocol to transmit

both upstream and downstream communications. Equipment assumptions (specifically section

2.2.1 of page 7, along with tables 2-1 and 2-2 of pages 8 and 9) of the DOCSIS protocol teach

hardware for data transmission in both the upstream and downstream directions. Also

disclosed in the DOCSIS standards is transmitting data through an allocation of mini-slots in the

upstream direction. This is also part of standard DOCSIS protocol. Section 6.5.4 on pages 93-

94 of the DOCSIS standards discloses using mini-slots, stating that 'a "mini-slot" is the unit of

granularity for upstream transmission opportunities.'

12.   At the time of the invention, it would have been obvious to one of ordinary skill in the

art to map the PCM samples present in the system of Gummalla to an allocation of mini-slots as

taught by DOCSIS standards. The suggestion for using the DOCSIS protocol to transmit the data

of Gummalla instead of other available protocols would be that, as stated on page 1 of the

DOCSIS standards, the DOCSIS protocol was a jointly created standard protocol that was

designed to "permit the early definition, design, development, and deployment of data-over-

cable systems on an uniform, consistent, open, non-proprietary, multi-vendor interoperable

basis" (see section 1.3.1). Therefore, it would have been obvious to carry out the transmission

system of Gummalla according to the DOCSIS protocol because the system would then be

operable with all cable operators who have embraced the standard, including most of the largest providers in the world.

13.   Regarding claim 3, the combination of Gummalla and the DOCSIS standards teach all limitations of the claim as discussed above, wherein the use of mini-slots to map samples is part of the assumed DOCSIS protocol standards.

14.   Regarding claim 4, the combination of Gummalla and the DOCSIS standards teach all of the limitations as stated above for claim 3, wherein Gummalla discloses sampling PCM data every 125 microseconds (page 2, paragraph 40) and the DOCSIS standards teach mini-slots occurring every 6.25 microseconds. Page 21 of the DOCSIS standards, section 4.2.1 teaches that the timing boundaries (edges of the mini-slots) for upstream communications are "spaced at integer multiples of 6.25 microseconds apart." If the integer would be one, then the mini-slot separation would be 6.25 microseconds.

15.   Regarding claim 6, the combination of Gummalla and the DOCSIS standards teach all limitations of the claim as discussed above, wherein the DOCSIS standards teach the use of DOCSIS as a downstream protocol.

16.   Regarding claim 7, the combination of Gummalla and the DOCSIS standards teach all limitations of the claim as discussed above, wherein pages 43-44 of the DOCSIS standards teaches that downstream transmission is a stream of MPEG information (second paragraph of section 5.1). This information is transmitted through the MPEG transport layer, as evident when the DOCSIS standards define the headers as "MPEG Transport Stream" headers in section 5.3. Thus, the data transmitted downstream in MPEG format is sent through the MPEG transport stream of the channel.

17.   Regarding claim 14, the combination of Gummalla and the DOCSIS standards teach all limitations of the claim as discussed above, wherein the DOCSIS standards disclose the ability of the system to transmit data upstream via DOCSIS protocol.

18.   Regarding claim 15, the combination of Gummalla and the DOCSIS standards teach all limitations of the claim as discussed above, wherein the use of mini-slots to map samples is

part of the assumed DOCSIS protocol standards as discussed previously in the rejection of claim 2.

19.   Regarding claim 16, the combination of Gummalla and the DOCSIS standards teach all limitations of the claim as discussed for claim 13 above, wherein Gummalla discloses sampling data at 125 microsecond intervals and DOCSIS standards teach mini-slots of 6.25 microseconds. See explanation for claim 4 above.

20.   Regarding claim 22, the combination of Gummalla and the DOCSIS standards teach all limitations of the claim as discussed for claim 21 above, wherein the DOCSIS standards disclose the ability of the system to transmit data downstream via DOCSIS protocol.

21.   Regarding claim 23, the combination of Gummalla and the DOCSIS standards teach all limitations of the claim as discussed for claim 21 above, wherein the DOCSIS standards teach that the data transmitted downstream is transmitted through the MPEG transport stream as discussed for claim 7 above.

22.   Regarding claim 29, the combination of Gummalla and the DOCSIS standards teach all limitations of the claim as discussed for claim 28 above, wherein the DOCSIS standards disclose the ability of the system to transmit data upstream via DOCSIS protocol.

23.   Regarding claim 30, the combination of Gummalla and the DOCSIS standards teach all limitations of the claim as discussed for claim 28 above, wherein the use of mini-slots to map samples is part of the assumed DOCSIS protocol standards as discussed previously in the rejection of claim 2.

24.   Regarding claim 31, the combination of Gummalla and the DOCSIS standards teach all of the limitations as stated above for claim 30, wherein Gummalla discloses sampling PCM data every 125 microseconds (page 2, paragraph 40) and the DOCSIS standards teach mini-slots occurring every 6.25 microseconds. See detailed explanation as discussed for claim 4.

25.   Claims 5, 17, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gummalla in view of Campbell (US 5,390,181). Regarding claim 5, Gummalla discloses all of

the limitations as set forth for claim 1 above; however, he fails to disclose sending two or more signals in one mini-slot.

26.   In analogous art, Campbell discloses a transmission channel control method wherein two or more request signals can be transmitted in a single mini-slot (column 8, lines 53-54).

27.   At the time of the invention, it would have been obvious to one of ordinary skill in the art to transmit more than one signal in a single mini-slot as shown by Campbell through the transmission system as taught by Gummalla. The motivation for doing so would have been to allow users attempting to send more than one signal from a single location at a single instant to do so. Allowing two signals to be transmitted simultaneously not only helps prevent latency, but also maximizes bandwidth by using a minimum of transmission slots. Therefore, it would have been obvious to one of ordinary skill in the art for cable providers to employ a multiplexing scheme to transmit multiple signals in a single mini-slot via the system of Gummalla to provide better service to clients.

28.   Regarding claim 17, the combination of Gummalla and Campbell disclose all limitations stated for claim 13 above, wherein Campbell teaches combining two or more signals into a single mini-slots as discussed in the above explanation for claim 5.

29.   Regarding claim 32, the combination of Gummalla and Campbell disclose all limitations stated for claim 28 above, wherein Campbell teaches combining two or more signals into a single mini-slots as discussed in the above explanation for claim 5.

30.   Claims 8 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gummalla in view of Gordon (US 6,614,843). Regarding claim 8, Gummalla discloses all of the limitations as set forth for claim 1 above; however, he fails to disclose multiplexing two or more signals into a single MPEG packet identifier.

31.   In analogous art, Gordon teaches a program guide transmission system in which one or more audio and one or more video signals are multiplexed together to create a single

transmission stream, wherein the multiplexed signals share a common packet identifier. (See column 44, lines 19-27).

32.   At the time of the invention, it would have been obvious to one of ordinary skill in the art to multiplex the multiple signals as taught by Gummalla within a single packet identifier as taught by Gordon. The motivation for doing so would have been to group data streams (audio, video, etc) depicting the same event together so that when they would reach the output end of the transmission channel the system would be able to demultiplex them together as well. Therefore, it would have been obvious to one of ordinary skill in the art to multiplex multiple signals transmitted downstream to the user via a cable protocol into a single packet identifier for easy information retrieval.

33.   Regarding claim 24, the combination of Gummalla and Gordon teaches all of the stated limitations of the claim as described for claim 21 above, wherein Gordon teaches multiplexing multiple signals into a single packet identifier as discussed previously for claim 8.

34.   Claims 10-12, 18-20, 25-27, and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gummalla in view of Sala (US 2001/0053152). Regarding claim 10, Gummalla teaches all limitations discussed for claim 1 above. Gummalla fails to disclose that transmitting the information without headers would reduce delay and jitter of the signals.

35.   In analogous art, Sala discloses that adding packet overhead would require more bandwidth and may cause packet latency (page 2, paragraph 19). Sala also teaches that this is a problem (page 2, paragraph 20). Since Sala acknowledges that adding packet overhead would require more bandwidth and may cause latency, it is apparent that in the absence of additional packet overhead problems such as delay and jitter (latency) would be diminished.

36.   At the time of the invention, it would have been obvious to one of ordinary skill in the art to use the header-less transmission system of Gummalla to reduce delay and jitter. The suggestion for doing so would be that Sala discloses it is well known in the art that the latency caused by excessive packet headers is a problem that needs solved. Since the problem had

been recognized and a solution was identified prior to the time of invention, it would have

been obvious to create the headerless transmission system for the purpose of reducing delay

and jitter for a cleaner, crisper signal on the output of the system.

37.   Regarding claim 11, the combination of Gummalla and Sala teaches all of the

aforementioned limitations, wherein Sala discloses that at least one of the downstream signals

is a video signal (page 3, paragraph 43). Sala states, "the data exchanged between CMTS and

cable modems includes text, video, audio, voice, graphics, other media, or a combination

thereof."

38.   Regarding claim 12, the combination of Gummalla and Sala teaches all of the

limitations as discussed for claim 11 above.

39.   Regarding claim 18, the combination of Gummalla and Sala teaches all of the

limitations as discussed for claim 13, wherein Sala teaches that reducing the amount of header

information associated with the transmitted signal can reduce latency and save bandwidth.

See rejection of claim 10 for further explanation.

40.   Regarding claim 19, the combination of Gummalla and Sala teaches all of the

limitations as discussed for claim 13 above, wherein Sala discloses that at least one of the

downstream signals is a video signal (page 3, paragraph 43).

41.   Regarding claim 20, the combination of Gummalla and Sala teaches all of the

limitations as discussed for claim 19 above.

42.   Regarding claim 25, the combination of Gummalla and Sala teaches all of the

limitations as discussed for claim 21, wherein Sala teaches that reducing the amount of header

information associated with the transmitted signal can reduce latency and save bandwidth.

See rejection of claim 10 for further explanation.

43.   Regarding claim 26, the combination of Gummalla and Sala teaches all of the

limitations as discussed for claim 21 above, wherein Sala discloses that at least one of the

downstream signals is a video signal (page 3, paragraph 43).

44.   Regarding claim 27, the combination of Gummalla and Sala teaches all of the limitations as discussed for claim 26 above.

45.   Regarding claim 33, the combination of Gummalla and Sala teaches all of the limitations as discussed for claim 28, wherein Sala teaches that reducing the amount of header information associated with the transmitted signal can reduce latency and save bandwidth. See rejection of claim 10 for further explanation.

46.   Regarding claim 34, the combination of Gummalla and Sala teaches all of the limitations as discussed for claim 28 above, wherein Sala discloses that at least one of the downstream signals is a video signal (page 3, paragraph 43).

47.   Regarding claim 35, the combination of Gummalla and Sala teaches all of the limitations as discussed for claim 34 above.

Conclusion

48.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

      a.   Gummalla et al. (US 2002/0064169) discloses a cable transmission system which sends data upstream in mini-slots and sends data downstream in the MPEG transport layer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley Stiles whose telephone number is (703) 308-6107. The examiner can normally be reached on 7:00-4:30, out of the office on alternating Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Faile can be reached on (703) 305-4380. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

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WLS
9/8/04

VIVEK SRIVASTAVA
PRIMARY EXAMINER